08756617.010301

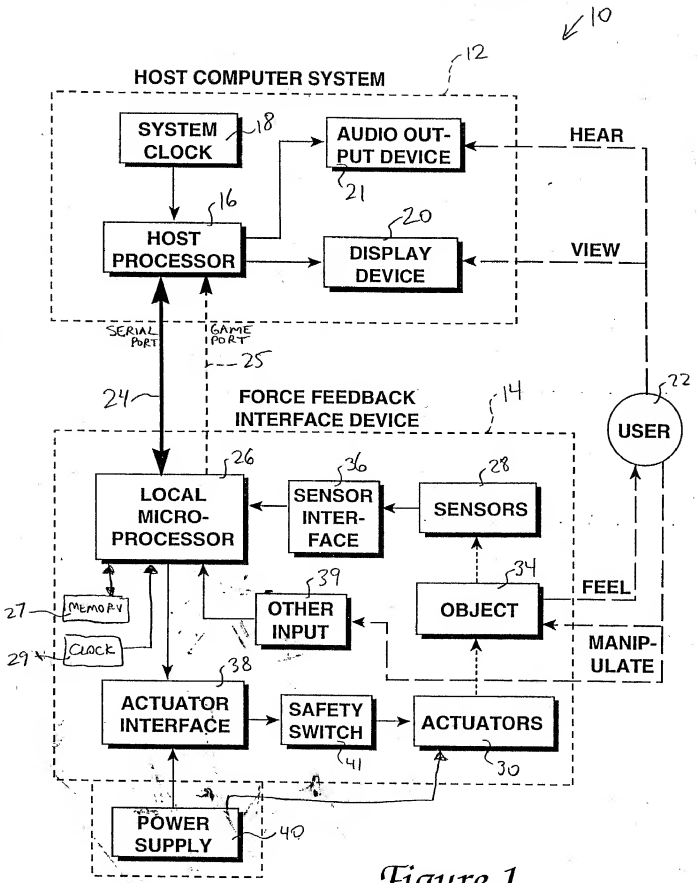
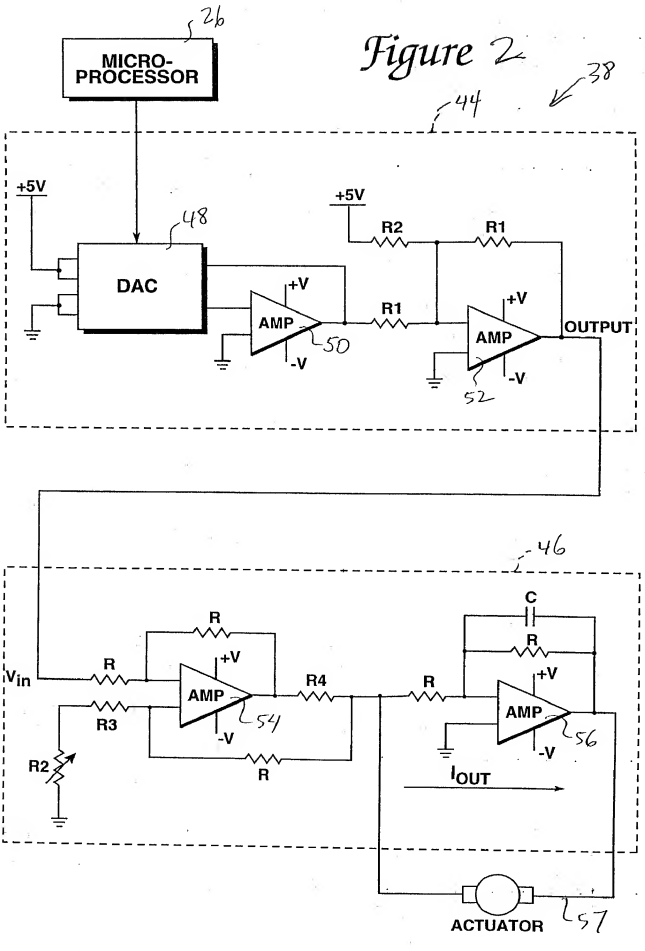


Figure 1

D0756617.D10301

Figure 2



09756617.010301

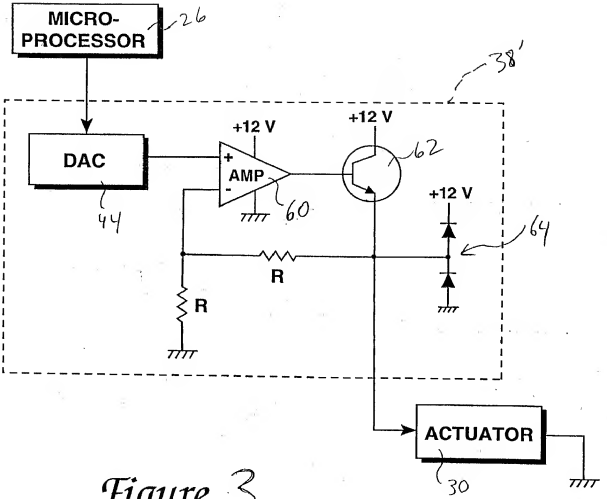


Figure 3

D0756617.D10301

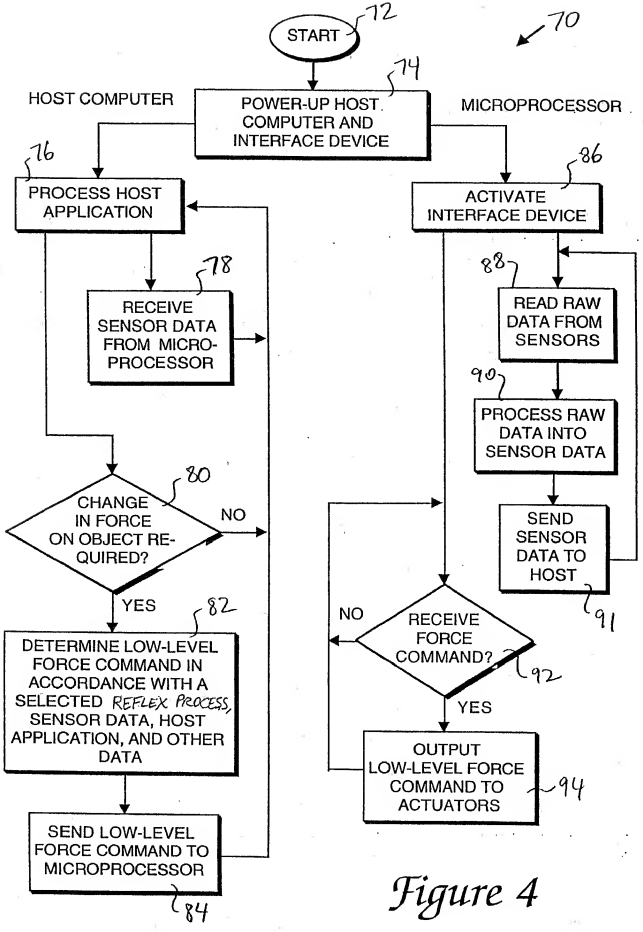


Figure 4

09756617.010301

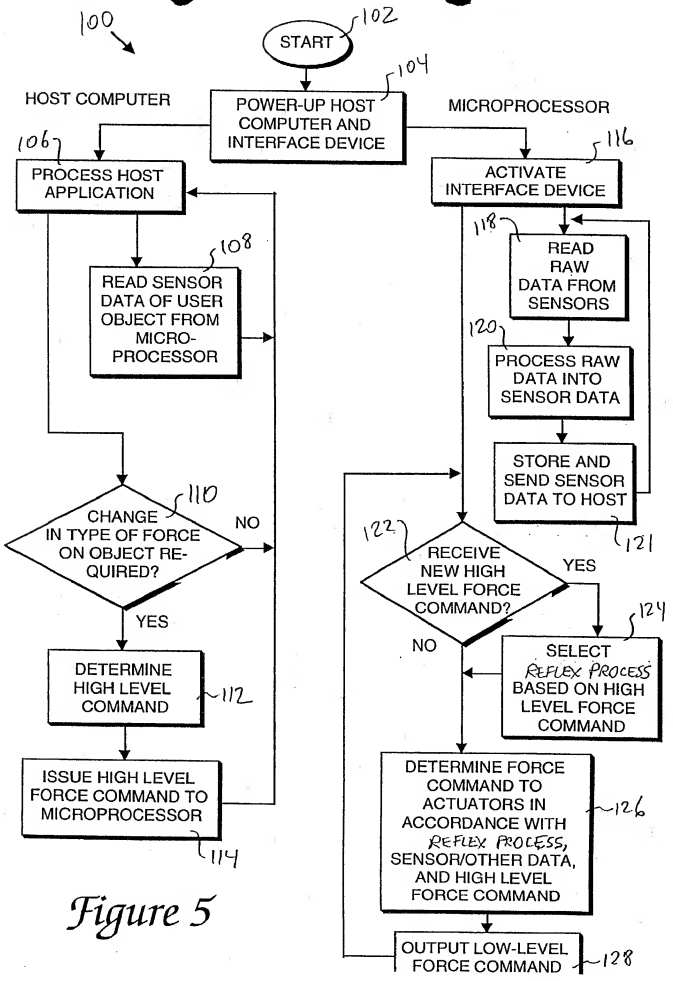


Figure 5

09756617.010301

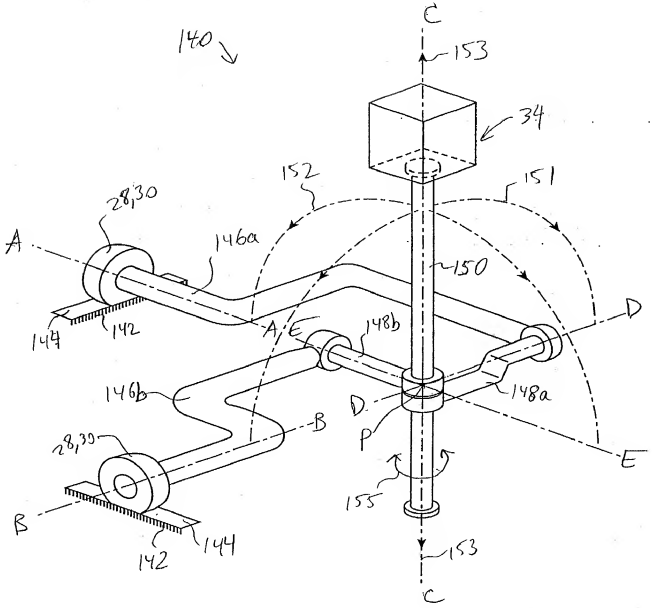


Figure 6

09756617.010301

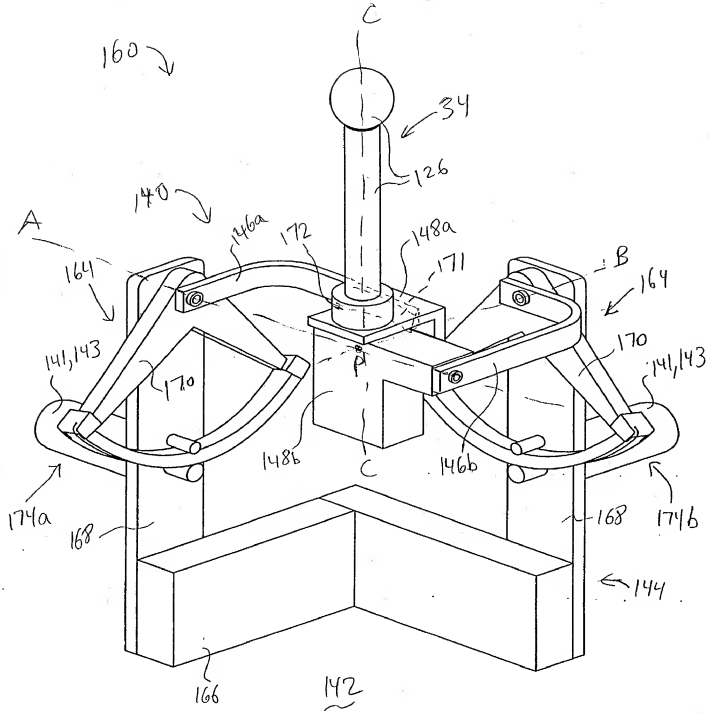


Figure 7

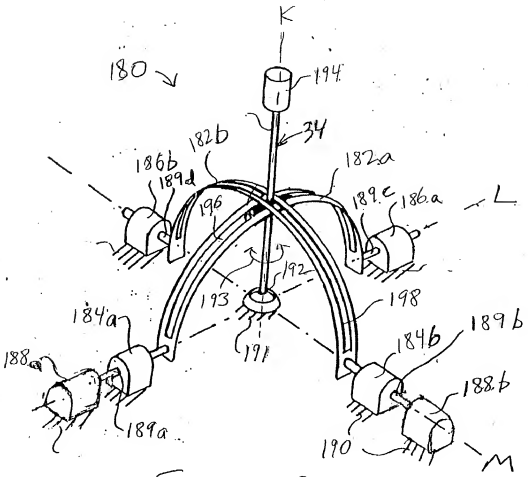

K
180
194
34
182b
186b
189d
182a
196
189c
186a
L
192
193
198
184a
191
189b
184b
188
188b
189a
190
M

Figure 8

300

RATE CONTROL COMMANDS

FORCE (302)	EXAMPLE OF COMMAND AND PARAMETERS (304) (306) (308)	SUBCLASS (310)
RESTORING	R_FORCE (MAGNITUDE, DURATION, STYLE, DEADBAND)	CONDITION
RESTORING SPRING	R_SPRING (COEFFICIENT, DURATION, STYLE, DEADBAND)	CONDITION
SLUGGISH STICK	SLUG (COEFFICIENT, DURATION, STYLE)	CONDITION
UNSTABLE	UNSTABLE (MAGNITUDE, DURATION, STYLE)	CONDITION
VECTOR	V_FORCE (MAGNITUDE, DURATION, DIRECTION)	OVERLAY
VIBRATION	V_VIBRATE (MAGNITUDE, DURATION, DIRECTION, FREQUENCY, STYLE)	OVERLAY
WOBBLE	WOBBLE (MAGNITUDE, DURATION, STYLE)	OVERLAY
BUTTON	B_FORCE (MAGNITUDE, DURATION, DIRECTION, BUTTON, AUTOFIRE)	OVERLAY/CONDITION
JOLT	JOLT (MAGNITUDE, DURATION, DIRECTION)	OVERLAY

FIGURE 9

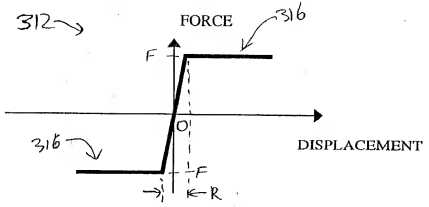


FIGURE 10a

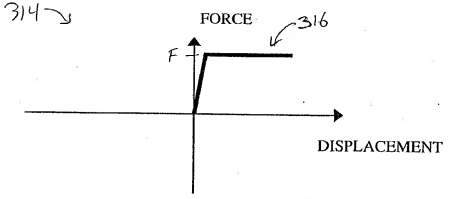


FIGURE 10b

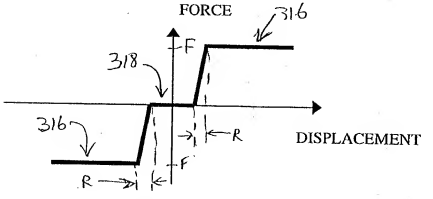


FIGURE 10c

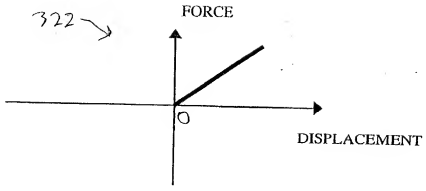


FIGURE 11b

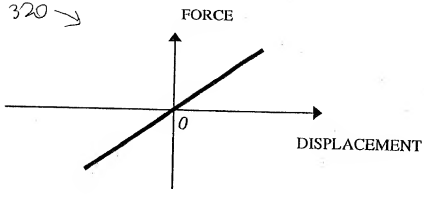


FIGURE 11a

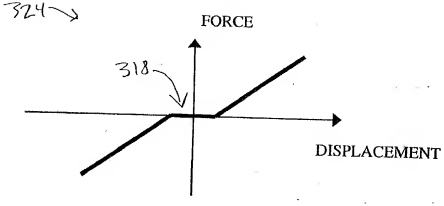


FIGURE 11c

09756617.010301

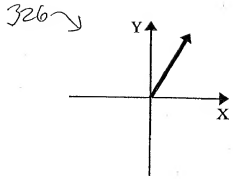


FIGURE 12

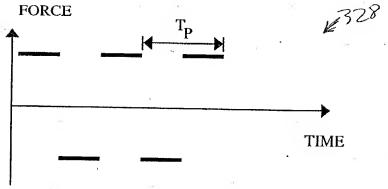


FIGURE 13a

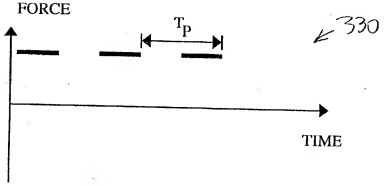


FIGURE 13b

FORCE (334)	POSITION CONTROL COMMANDS (332) EXAMPLE OF COMMAND AND PARAMETERS (336) (338) (340)
VECTOR	P_FORCE (MAGNITUDE, DIRECTION)
GROOVE	GROOVE (MAGNITUDE, STYLE, SNAP-DISTANCE)
DIVOT	DIVOT (MAGNITUDE, STYLE, SNAP-DISTANCE)
TEXTURE	TEXTURE (MAGNITUDE, DENSITY, STYLE)
BARRIER	X_BARRIER (MAGNITUDE, LOCATION, SNAP-DISTANCE)
FIELD	FIELD (MAGNITUDE, ORIGIN, SENSE)
PADDLE	PADDLE (MASS, GRAVITY, COMPLIANCE, SENSE)
BUTTON	BUTTON (MAGNITUDE, DIRECTION, BUTTON, AUTOFIRE)

FIGURE 14

09756617.010301

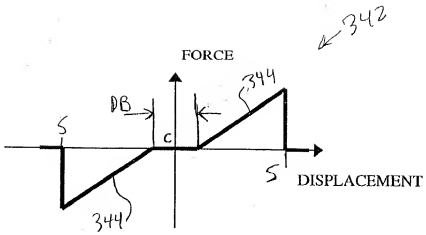


FIGURE 15

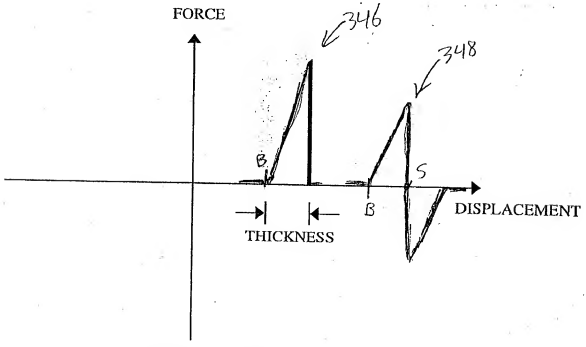


FIGURE 16

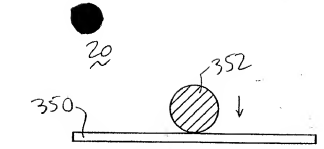


Fig. 17a

Fig. 17b

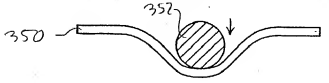


Fig. 17c

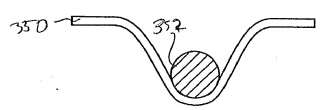


Fig. 17d

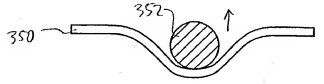


Fig. 17e

Fig. 17f

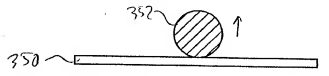


Fig. 17g

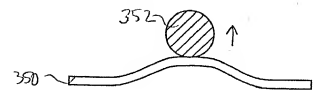


Fig. 17h

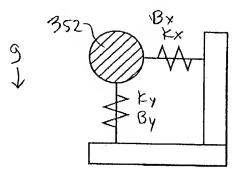


Fig. 17i

09756617.010301

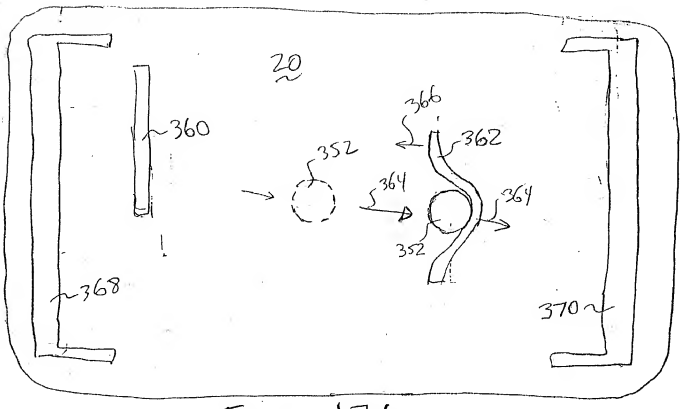


Figure 17j

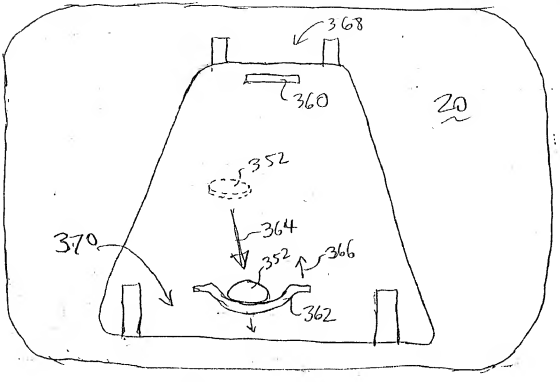


Figure 17k

09756617.010301

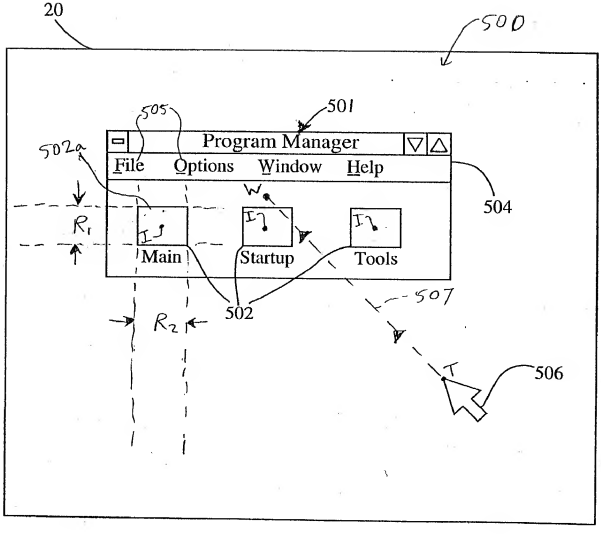


Figure 18

09756617.010301

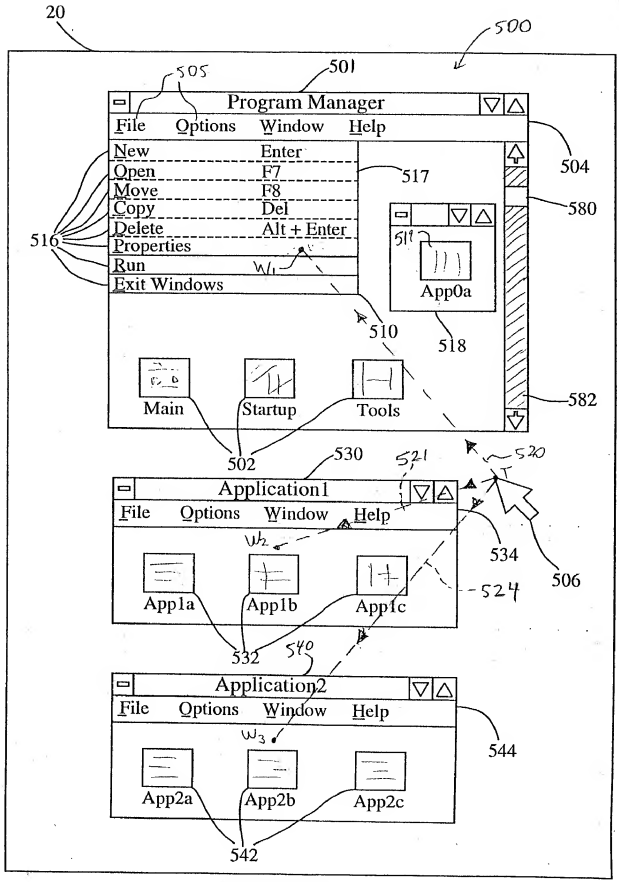


Figure 19

09756617.019301

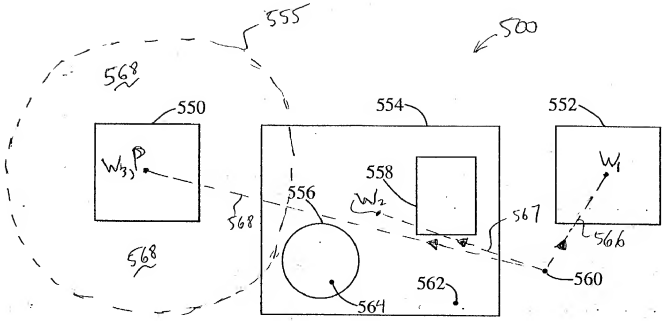


Figure 20a

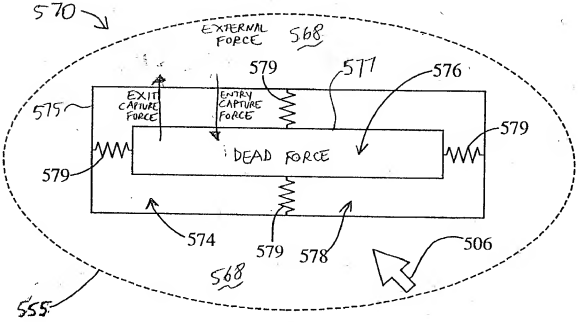


Figure 20b

09756617.010301

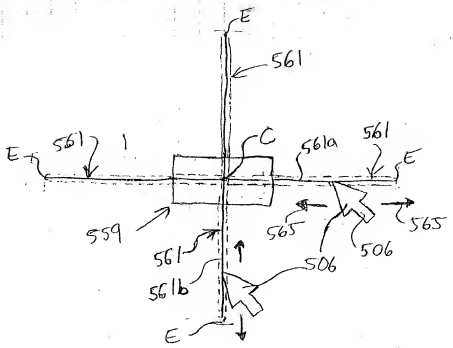


Figure 20c

09756517.010301

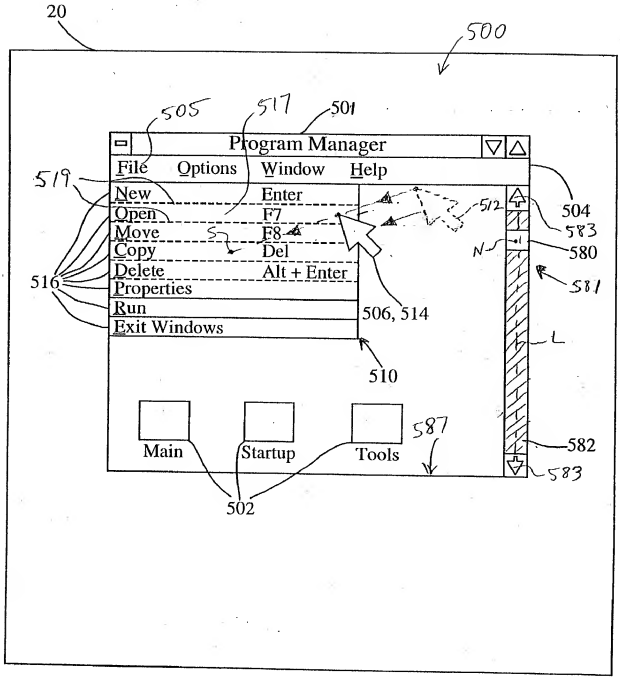


Figure 2

09756617.010301

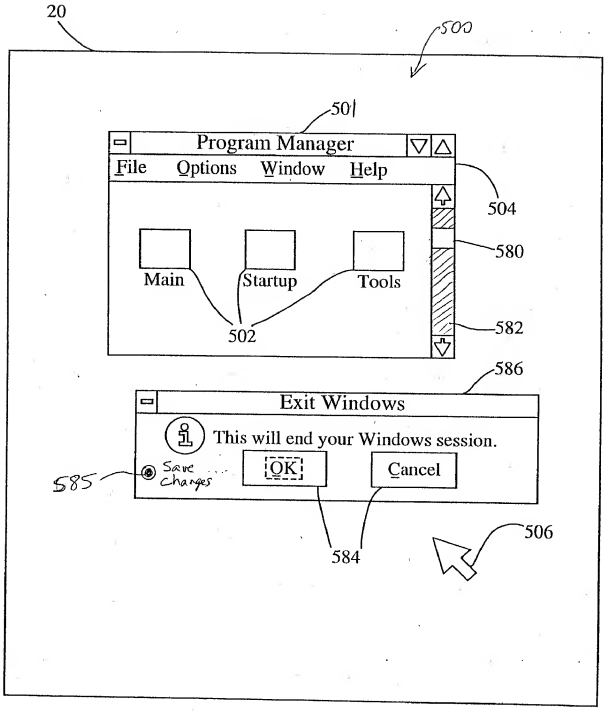


Figure 22

09756617.010301

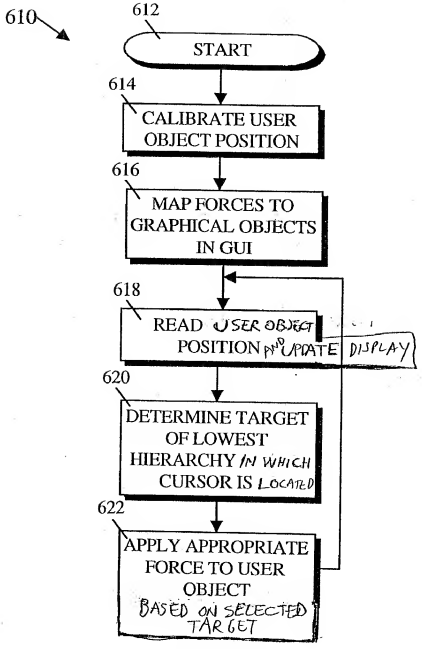


Figure 23

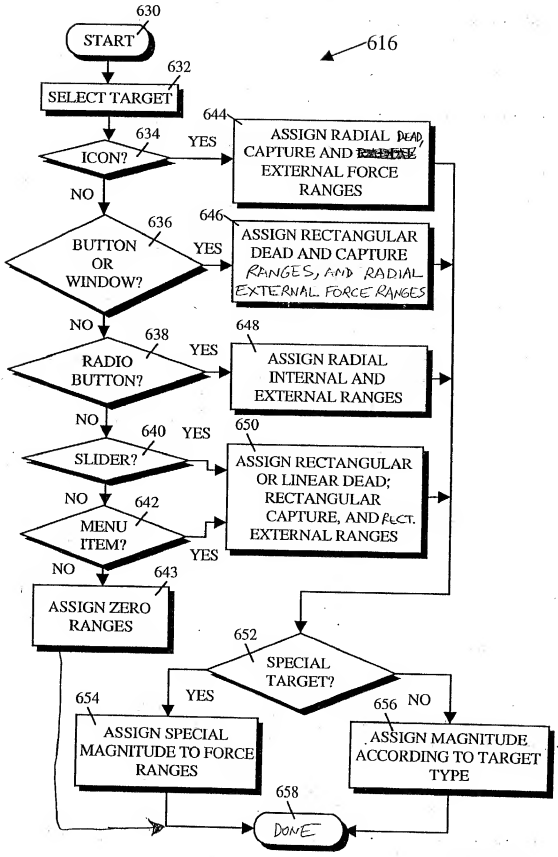

630
START
616
632
SELECT TARGET
644
634
YES
ICON?
ASSIGN RADIAL DEAD CAPTURE AND EXTERNAL FORCE RANGES
NO
636
646
BUTTON OR WINDOW?
YES
ASSIGN RECTANGULAR DEAD AND CAPTURE RANGES, AND RADIAL EXTERNAL FORCE RANGES
NO
638
648
RADIO BUTTON?
YES
ASSIGN RADIAL INTERNAL AND EXTERNAL RANGES
NO
640
YES
650
SLIDER?
ASSIGN RECTANGULAR OR LINEAR DEAD; RECTANGULAR CAPTURE, AND RECT. EXTERNAL RANGES
NO
642
MENU ITEM?
YES
NO
643
ASSIGN ZERO RANGES
652
SPECIAL TARGET?
YES
654
NO
656
ASSIGN SPECIAL MAGNITUDE TO FORCE RANGES
ASSIGN MAGNITUDE ACCORDING TO TARGET TYPE
658
DONE

Figure 24

09756617.010301

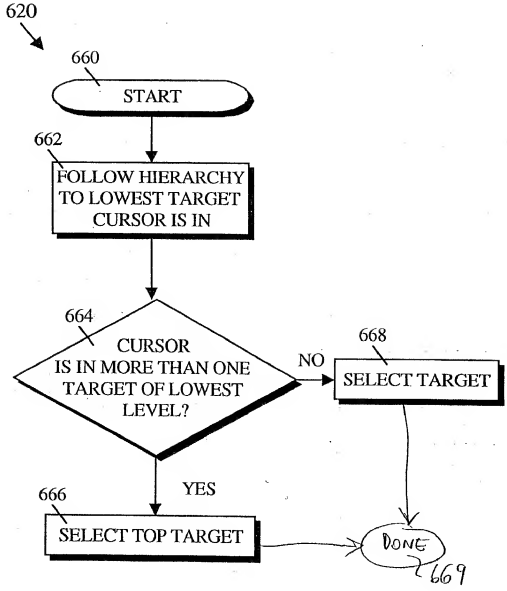


FIGURE 25

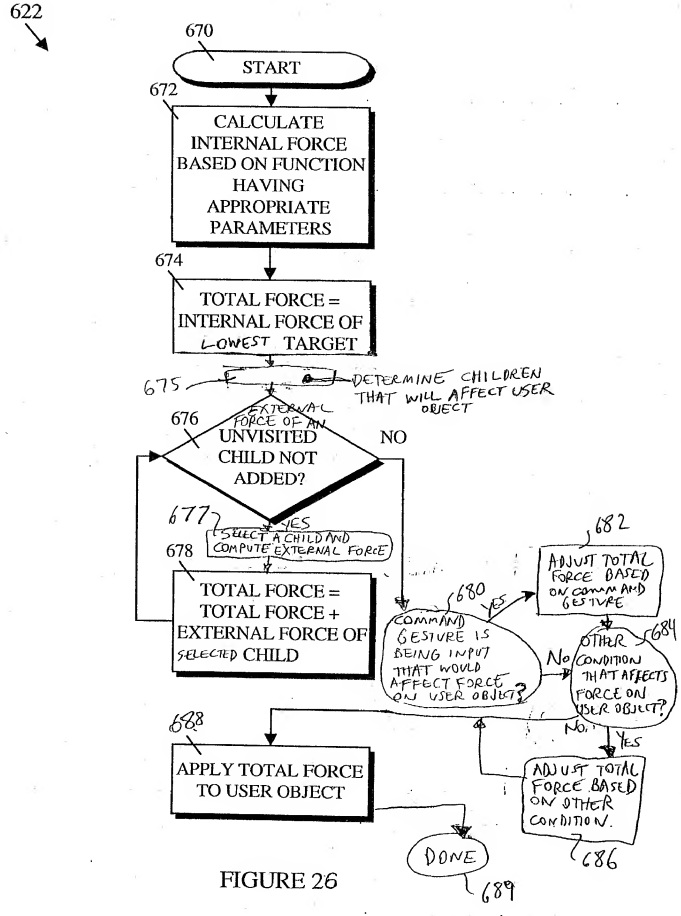

622
670
START
672
CALCULATE INTERNAL FORCE BASED ON FUNCTION HAVING APPROPRIATE PARAMETERS
674
TOTAL FORCE = INTERNAL FORCE OF LOWEST TARGET
675
DETERMINE CHILDREN THAT WILL AFFECT USER OBJECT
676
EXTERNAL FORCE OF AN UNVISITED CHILD NOT ADDED?
NO
YES
677
SELECT A CHILD AND COMPUTE EXTERNAL FORCE
678
TOTAL FORCE = TOTAL FORCE + EXTERNAL FORCE OF SELECTED CHILD
680
COMMAND GESTURE IS BEING INPUT THAT WOULD AFFECT FORCE ON USER OBJECT?
YES
682
ADJUST TOTAL FORCE BASED ON COMMAND GESTURE
No
684
OTHER CONDITION THAT AFFECTS FORCE ON USER OBJECT?
No
YES
686
ADJUST TOTAL FORCE BASED ON OTHER CONDITION.
688
APPLY TOTAL FORCE TO USER OBJECT
DONE
689

FIGURE 26

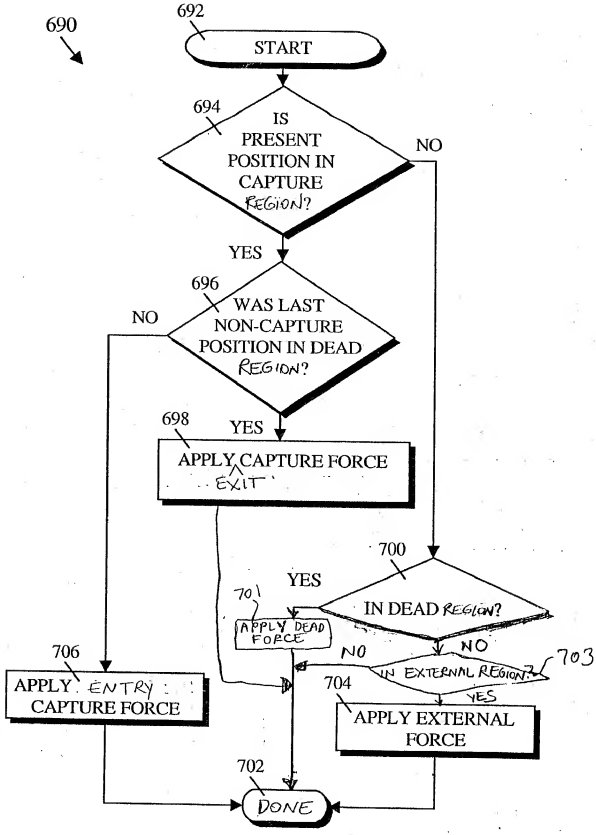

690
692
START
694
IS PRESENT POSITION IN CAPTURE REGION?
NO
YES
696
WAS LAST NON-CAPTURE POSITION IN DEAD REGION?
NO
YES
698
APPLY CAPTURE FORCE
EXIT
700
YES
IN DEAD REGION?
701
APPLY DEAD FORCE
NO
NO
IN EXTERNAL REGION?
703
YES
704
APPLY EXTERNAL FORCE
706
APPLY ENTRY CAPTURE FORCE
702
DONE

FIGURE 27